UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,146	04/27/2005	David Long	100750.0001US	8969

34284 7590 08/11/2008

Rutan & Tucker, LLP.
611 ANTON BLVD
SUITE 1400
COSTA MESA, CA 92626

EXAMINER	
VANOY, TIMOTHY C	
ART UNIT	PAPER NUMBER
1793	

MAIL DATE	DELIVERY MODE
08/11/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/507,146	LONG, DAVID	
	Examiner	Art Unit	
	TIMOTHY C. VANOY	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 August 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3-19* is/are rejected.

7)☒ Claim(s) *6 and 7* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 September 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on Aug. 1, 2008 has been entered.

Claim Objections

a) Claims 6 and 7 are objected to because the "consisting essentially of" language in Applicant's claim 3 is not consistent with the "comprising" language of Applicants' claims 6 and 7.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

The person having ordinary skill in the art has the capability of understanding the scientific and engineering principles applicable to the claimed invention. The references of record in this application reasonably reflect this level of skill.

Claims 3-16 rejected under 35 U.S.C. 103(a) as being unpatentable over the English translation of JP 55-139,819 A.

Claim 1 in the English translation of JP-819 discloses a process for removing cyanide and nitrogen oxides from a waste gas by contacting the waste gas with a catalyst at an elevated temperature. Pg. 12, 2nd full paragraph in the English translation of JP-819 sets forth that if the waste gas contains nitrogen oxides alone, then cyanides can be added to the waste gas. Pg. 7, 1st full paragraph in the English translation of JP-819 sets forth that reaction temperatures of 450 °C (842 °F) or lower may be used.

The difference between the process described in the invention of JP-819 and the Applicants' claims is that the process of JP-819 conducts the denitration at a temperature of 450 °C or less (i. e. 842 °F or less) whereas the Applicants' claims call for conducing the denitration at a temperature of 1,200 to 1,700 °F, *however* it is submitted that this difference would have been obvious to one of ordinary skill in the art at the time the invention was made *because* pg. 4, 2nd full paragraph in the English translation of JP-819 discloses a similar reaction between nitrogen oxides and cyanide at temperatures of 1,400 °C or below and the courts have already determined that the

overlapping portion of a claimed range and a prior art reference's range is *prima facie* obvious: please note the discussion of the *In re Wertheim* 541 F.2d 257, 191 USPQ 90 (CCPA 1976) court decision set forth in section 2144.05(I) in the MPEP.

The difference between the Applicants' claims and JP 55-139,819 A is that the Applicants' claims call for the injection of a waste which contains the cyanide, whereas JP 55-139,819 A seems to allude to the injection of cyanide alone on pg. 12, 2nd full paragraph in the English translation of JP-819, *however* it is submitted that this difference would have been obvious to one of ordinary skill in the art at the time the invention was made *because* one skilled in the art would have a "reasonable expectation of success" of using any material that contains cyanide, such as the "cyanides" mentioned on pg. 12 in the English translation of JP-819 *or* the cyanide-containing waste of the Applicants' claims: please note the discussion of the *In re Merck & Co. Inc.* 800 F.2d 1091, 231 USPQ 375 (fed. Cir. 1986) court decision set forth in section 2143.02(I) in the MPEP. No criticality or unexpected advantages are seen in using a cyanide-containing waste as compared to any other source of cyanide.

Note that the mixing in of the cyanide into the NOx-containing gas is taught on pg. 12, 2nd full paragraph in the English translation of JP 55-139,819 A where it is taught "As for a waste gas containing nitrogen oxides alone, the method of the present invention can be implemented by adding cyanides secondarily". Also, note that the absence of a catalyst is obvious from the description of the prior art process set forth on pg. 4, 2nd full paragraph in the English translation of JP 55-139,819 A which also does not mention the use of a catalyst and also uses the Applicants' claimed temperatures.

Claims 8-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Pat. 6,210,154 B1 to Evans et al. in view of the English translation of JP 55-139,819 A.

The English abstract of the Evans et al. patent describes a method and apparatus for removing nitrogen oxides emitted from a cement manufacturing plant that comprises a kiln and a Lepol pre-heater, by injecting the NOx-reducing agent (i. e. waste tires) into the pre-heater.

The difference between the Applicants' claims and this Evans et al. patent is that Applicants' claims call for using a cyanide-containing waste as the NOx reductant at a temperature ranging from 1,200 to 1,700 ^{o}F.

Claim 1 in the English translation of JP-819 discloses a process for removing cyanide and nitrogen oxides from a waste gas by contacting the waste gas with a catalyst at an elevated temperature. Pg. 12, 2nd full paragraph in the English translation of JP-819 sets forth that if the waste gas contains nitrogen oxides alone, then cyanides can be added to the waste gas. Pg. 7, 1st full paragraph in the English translation of JP-819 sets forth that reaction temperatures of 450 ^{o}C (842 ^{o}F) or lower may be used.

The difference between the process described in the invention of JP-819 and the Applicants' claims is that the process of JP-819 conducts the denitration at a temperature of 450 ^{o}C or less (i. e. 842 ^{o}F or less) whereas the Applicants' claims call for conducing the denitration at a temperature of 1,200 to 1,700 ^{o}F, *however* it is

submitted that this difference would have been obvious to one of ordinary skill in the art at the time the invention was made *because* pg. 4, 2nd full paragraph in the English translation of JP-819 discloses a similar reaction between nitrogen oxides and cyanide at temperatures of 1,400 ^{o}C or below and the courts have already determined that the overlapping portion of a claimed range and a prior art reference's range is *prima facie* obvious: please note the discussion of the *In re Wertheim* 541 F.2d 257, 191 USPQ 90 (CCPA 1976) court decision set forth in section 2144.05(I) in the MPEP.

The difference between the Applicants' claims and JP 55-139,819 A is that the Applicants' claims call for the injection of a waste which contains the cyanide, whereas JP 55-139,819 A seems to allude to the injection of cyanide alone on pg. 12, 2nd full paragraph in the English translation of JP-819, *however* it is submitted that this difference would have been obvious to one of ordinary skill in the art at the time the invention was made *because* one skilled in the art would have a "reasonable expectation of success" of using any material that contains cyanide, such as the "cyanides" mentioned on pg. 12 in the English translation of JP-819 *or* the cyanide-containing waste of the Applicants' claims: please note the discussion of the *In re Merck & Co. Inc.* 800 F.2d 1091, 231 USPQ 375 (fed. Cir. 1986) court decision set forth in section 2143.02(I) in the MPEP. No criticality or unexpected advantages are seen in using a cyanide-containing waste as compared to any other source of cyanide.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made *to have modified* the process and apparatus described in the Evans et al. patent *by substituting* the cyanide-containing waste obvious from JP-

819 *in lieu of* the waste tires used in the process and apparatus of the Evans et al. patent into the process and apparatus of the Evans et al. patent, in the manner required by the Applicants' claims, *because* the courts have already determined that such substitution of one known functional equivalent in lieu of another known functional equivalent (both of which are useful for the same purpose) is *prima facie* obvious: please note the discussion of the *In re Fout* 675 F.2d 297, 213 USPQ 532 (CCPA 1982) court decision set forth in section 2144.06(II) in the MPEP.

Note that the mixing in of the cyanide into the NOx-containing gas is taught on pg. 12, 2nd full paragraph in the English translation of JP 55-139,819 A where it is taught "As for a waste gas containing nitrogen oxides alone, the method of the present invention can be implemented by adding cyanides secondarily". Also, note that the absence of a catalyst is obvious from the description of the prior art process set forth on pg. 4, 2nd full paragraph in the English translation of JP 55-139,819 A which also does not mention the use of a catalyst and also uses the Applicants' claimed temperatures.

Double Patenting

a) Claims 3-19 of this application conflict with claims 1-19 of Application No. 11-949,628. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either

cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

b) A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 17-19 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 17-19 of copending Application No. 11-949,628. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Response to Arguments

Applicants' arguments submitted with the Amendment filed on March 28, 2008 have been fully considered but they are not persuasive.

a) *The Applicant argues that the gas in Japanese-819 includes cyanides and nitrogen oxides, in combination. The Applicant was unable to find a reference where nitrogen oxides and cyanide are actually mixed together.*

The Applicant's attention is directed to the 2nd full paragraph in the English translation of JP 55-139,819 A, where it is set forth "As for a waste gas containing nitrogen oxides alone, the method of the present invention can be implemented by adding cyanides secondarily.". This disclosure meets the Applicant's argued limitation that the nitrogen oxides-containing gas and the cyanides are mixed together.

b) *The Applicant argues that the prior art reference requires this gaseous waste matter to be used in conjunction with a catalyst such as chromium, copper oxide and/or titanium oxide. It is this catalyst that allows for the purification of the waste gas and not the addition of the cyanide as represented in the present invention.*

The "comprising" language of the Applicants' independent claims embrace the use of the same catalyst that the process of Japanese-819 uses. In Japanese-819, the cyanides chemically react with the NO_x: please note the 3rd full paragraph in the English translation of JP 55-139,819 A where it is set forth "The aforesaid catalysts, which are the most important feature of the present invention, are capable of causing the reaction between cyanides and nitrogen oxides to progress. . .".

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMOTHY C. VANOY whose telephone number is (571)272-8158. The examiner can normally be reached on Mon-Fri 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Timothy C Vanoy
Primary Examiner
Art Unit 1793

tcv

/Timothy C Vanoy/
Primary Examiner, Art Unit 1793